



Some Purposes and Kinds of Questions Used in Learning Science

1. Ask or promote questions to open inquiry and elicit students' initial understanding and reasoning.
 - "Even though you may not have formally studied this topic yet, I'd like to know how you predict what you think would happen in this situation, and
 - "Briefly explain how you decided." (i.e. what experiences and rationale led you to that answer?)
 - "What would happen if...? What makes you think so?"
 - "So when you see this situation (demonstrated/ viewed/ heard about), what do you wonder about? See anything that you are curious about there?"
2. To interpret and make sense of data in order to generate new knowledge and understanding.
 - "What, if any, patterns do you see in the data?"
 - "How do you make sense of these observations you've just shown me?"
 - "These are the results. What can you conclude from these results?"
3. To clarify or elaborate on observations and inferences.
 - "Say more- can you be more specific about what you observed?"
 - "What do you mean by ____?" (the word/ technical term just used)
 - "Which object were you referring to when you said, 'That one will be bigger'?"
4. To encourage learners to justify their answers and conclusions or to explain their reasoning to go beyond a mere stating of an answer.
 - "How do you know that?"
 - "How did you come to that conclusion?"
 - "Why do you believe [that conclusion]?"
 - "What evidence do you have for that?"
 - "What is the rationale for coming to that conclusion?"
5. To extend or apply learned ideas.
 - "Given the relationship we just concluded, what would happen if we doubled this [input] variable?"
 - "What are some other situations in which you think this idea might apply?"
 - "How might this idea apply to this new situation [described]?"
6. To help learners monitor their own learning.
 - "What is it that does not yet make sense to you?"
 - "How could you find out?"
 - "What might you do to test your idea?"
7. Other ?